

ABSTRACT OF THE DISCLOSURE

5 A computer system employs virtual channels and allocates different resources to
the virtual channels. Packets which do not have logical/protocol-related conflicts are
grouped into a virtual channel. Accordingly, logical conflicts occur between packets in
separate virtual channels. The packets within a virtual channel may share resources (and
hence experience resource conflicts), but the packets within different virtual channels
may not share resources. Since packets which may experience resource conflicts do not
10 experience logical conflicts, and since packets which may experience logical conflicts do
not experience resource conflicts, deadlock-free operation may be achieved.
Additionally, each virtual channel may be assigned control packet buffers and data packet
buffers. Control packets may be substantially smaller in size, and may occur more
frequently than data packets. By providing separate buffers, buffer space may be used
15 efficiently. If a control packet which does not specify a data packet is received, no data
packet buffer space is allocated. If a control packet which does specify a data packet is
received, both control packet buffer space and data packet buffer space is allocated.